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10/648,370	08/27/2003	Keiji Taniguchi	0033-0900P	3706

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EXAMINER

BETZ, BLAKE E

ART UNIT PAPER NUMBER

2672

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/648,370

Applicant(s)

TANIGUCHI ET AL.

Examiner

Blake E. Betz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☒ Claim(s) 1, 18, and 20 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

Claims 1 and 18 are objected to because of the following informalities: claim 1 claims generating data for two-dimensional display and data for three-dimensional display from common data based on said instruction. The scope of "common data" is unclear; a suggested correction for "common data" is "the same image data." Additionally, claim 1 makes no reference to an instruction before mentioning, "said instruction." A suggested correction for "said instruction" is, "said instructing." Claim 18 claims that said common data includes data corresponding to several eye position. Since no correspondence can be found between "several eye position" in claim 18 with the specification, it is suggested to change the claim to the following: "said common data includes data corresponding to left and right eye images" or "said common data includes data corresponding to stereoscopic images". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 – 4 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,315,377 to Isono et al.

Isono et al. clearly discloses the equipment of claim 1. Figure 1 shows a panel, element 46, for the display of both a two and three-dimensional image. Column 4, lines 32 – 34, states, "A parallax barrier is electrically and programably displayed on the whole screen of the panel 28 in the 3D mode and a portion of the screen in the (2+3) or (2+3)D mode." Lines 45 – 46 state, "No parallax barrier is displayed in the 2D mode." Thus, a parallax optic, parallax barrier element 28 of Figure 1, can be selectively formed for the display of a three-dimensional image or removed for the display of a two-dimensional image. Column 6, lines 15 – 23, describes a control portion to control image display and generation of a parallax barrier. "In response to an input command, the computer 20 controls an image data processor 32 to control image display, a controller 22 to control the generation of a barrier, and a controller 58 to control the enlarging section 56. Since the computer 20 is used as not only a control unit but also an arithmetic operation processing unit, in order to reduce the load, the control of each section is executed by the processor 32 and the controllers 22 and 58." Additionally, lines 24 – 36 state, "In response to an input display control command, the computer 20 sets display mode data, window data, view point count data, signal kind data, and input/output data as control data into registers 80-1 to 80-5 of the processor 32 and also sets the display mode data, the window data, and the view point count data as control

data into registers 22-1 to 22-3 of the controller 22. Even when the display control command is supplied from the communication line 16 through the interface 12 the computer 20 sets the control data. The display mode data includes data 2D, 3D, (2+3)D and (2+3)D data corresponding to the 2D mode, 3D mode, (2+3)D mode, and (2+3)D mode, respectively." Thus, Isono describes a control portion instructing switching of the display between two and three-dimensional images involving a parallax optic and generating data for the display from image data based on said instructing.

Claims 2, 3, and 4 are disclosed by Isono et al. Column 4, lines 32 – 34, states, "A parallax barrier is electrically and programably displayed on the whole screen of the panel 28 in the 3D mode and a portion of the screen in the (2+3) or (2+3)D mode." Lines 45 – 46 state, "No parallax barrier is displayed in the 2D mode." Figures 11 and 13 show the composition of the parallax barrier including a liquid crystal layer placed between polarizing plates and glass plates. Column 3, lines 6 – 12, states, "A stripe barrier is electronically generated on the liquid crystal panel surface of the second layer. The image on the liquid crystal panel surface of the first layer can be stereoscopically seen. Further, since the generation of the stripe barrier can be electrically programably changed, a 3D image of an arbitrary number of view points can be displayed." Thus, the display portion of Isono includes a liquid crystal device electrically selecting the presence or absence of a parallax optic. The electrically programmable parallax barrier including the polarizing plates of Figures 11 and 13 disclose the patterning phase contrast plate of claim 3 and selectively performing pattern display of a parallax barrier of claim 4.

Claim 17 is disclosed by Isono et al. Figure 1 shows VRAM, element 34, for storing graphics data for display of a two and three-dimensional image and a display portion, element 100, that includes a display panel, element 46, for displaying two and three-dimensional images and a parallax barrier panel, element 28, for selectively forming a state where optical parallax is generated. Column 6, lines 15 – 23, states, “In response to an input command, the computer 20 controls an image data processor 32 to control image display, a controller 22 to control the generation of a barrier, and a controller 58 to control the enlarging section 56. Since the computer 20 is used as not only a control unit but also an arithmetic operation processing unit, in order to reduce the load, the control of each section is executed by the processor 32 and the controllers 22 and 58.” Also shown in Figure 1 is the image data processor, element 32, which controls the VRAM and display controllers. Column 6, lines 24 – 50, describes generating data for the display of two and three-dimensional images based on data common to the displayed image from memory in accordance with the input instruction and outputting a command, mode data, for enabling the display of one of two or three-dimensional images.

Claims 5 – 16, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,315,377 to Isono et al. as applied to claims 1 and 17 above, and further in view of U.S. Patent No. 6,765,568 to Swift et al.

Isono et al. as applied to claim 1 teaches of the equipment of claims 5, 9, and 13 except wherein said common data includes image data corresponding to several views and said control portion generates said data for the two-dimensional display based on

said image data corresponding to said several views. Swift et al. teaches of an electronic stereoscopic media delivery system for distributing stereoscopic media in electronic form. Column 2, lines 29 – 44, states, "The preferred embodiment addresses the problem of delivering stereoscopic media in electronic form (images, videos, animations, object models, etc.). Firstly, it provides a single format with independent right and left channels (with an option for mixed or combined right and left channels) to represent the stereoscopic media. Secondly, it provides a means of displaying stereoscopic media inside a movable windowed area while eliminating pseudostereo conditions during movement. Thirdly, it provides automatic and manual optimization adjustments such as parallax shift adjustment, brightness control, color adjustment, and cross-talk reduction to the stereoscopic media based on viewing hardware, monitor size, and media content for optimal viewing quality. Fourthly, it provides seamless support for monoscopic (2D) viewing modes allowing delivery of said stereoscopic media in a normal 2D viewing mode." Column 6, lines 32 – 46, states, "This invention can have greater distribution and market penetration since it is not dependent upon a physical viewing device. This viewing system can be toggled to display monoscopic, as well as various stereoscopic modes (color anaglyph, gray anaglyph, line interleaved, page-flipping, cross-eye, parallel viewing, etc.). In monoscopic mode, the image appears in 2D like other 2D web based images which allows all web users to view the images in 2D even if they do not have a stereoscopic viewing device.

This is accomplished by showing either the left or right mono image. The user can select whether to view the left or right monoscopic view. Users without a physical

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stereo viewing device can see the media in monoscopic form by selecting to use either the right or left monoscopic views.” Thus, Swift et al. discloses common data including data corresponding to several views, left and right image views, and displaying a monoscopic, two-dimensional image based on a selectively extracted view from one of the left and right views. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Isono et al. so that the common data includes image data corresponding to several views. One would have been motivated to make such a modification to the invention of Isono so that the common data already includes the left and right image view of the three-dimensional data and the circuit for converting digital image signals into a three-dimensional image signal as mentioned in Column 7, lines 46 – 52, may be omitted. It would have also been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention of Isono et al. to include selectively extracting one of the two left and right stereoscopic images views for the two-dimensional display image. One would have been motivated to make such a modification to the invention of Isono so that memory and system resources may be saved in that a separate monoscopic, two-dimensional image is not required for either stereoscopic or monoscopic image viewing. Additionally, users who prefer the two-dimensional display rather than the three-dimensional display may be given the option of viewing three-dimensional images in a two-dimensional mode.

Isono et al. and Swift et al. as applied to claims 5, 9, and 13 teach of the equipment of claims 6 – 8, 10 – 12, and 14 – 16. Column 4, lines 32 – 34, states, “A

parallax barrier is electrically and programably displayed on the whole screen of the panel 28 in the 3D mode and a portion of the screen in the (2+3) or (2+3)D) mode.” Lines 45 – 46 state, “No parallax barrier is displayed in the 2D mode.” Figures 11 and 13 show the composition of the parallax barrier including a liquid crystal layer placed between polarizing plates and glass plates. Column 3, lines 6 – 12, states, “A stripe barrier is electronically generated on the liquid crystal panel surface of the second layer. The image on the liquid crystal panel surface of the first layer can be stereoscopically seen. Further, since the generation of the stripe barrier can be electrically programably changed, a 3D image of an arbitrary number of view points can be displayed.” Thus, the display portion of Isono includes a liquid crystal device electrically selecting the presence or absence of a parallax optic. The electrically programmable parallax barrier including the polarizing plates of Figures 11 and 13 disclose the patterning phase contrast plate of claims 7, 11, and 15 and selectively performing pattern display of a parallax barrier of claims 8, 12, and 16.

Isono et al. as applied to claim 17 teaches of the equipment of claim 18 except where said common data includes data corresponding to left and right eye images and said control portion generates the data for the display of said two-dimensional image based on portions of said data corresponding to said several views read from memory. Isono discloses a switching means for causing optical parallax to be selectively generated with respect to images displayed. When the switching means attains a state where the optical parallax is not generated, a two-dimensional image is displayed as stated in Column 4, lines 45 – 46, “No parallax barrier is displayed in the 2D mode.”

Figures 2 and 9 show a plurality of display elements making up the display panels 28 and 46. Columns 9 and 10 describe mapping the plurality of display elements to data corresponding to several views. Swift et al. teaches of an electronic stereoscopic media delivery system for distributing stereoscopic media in electronic form. Column 2, lines 29 – 44, states, "The preferred embodiment addresses the problem of delivering stereoscopic media in electronic form (images, videos, animations, object models, etc.). Firstly, it provides a single format with independent right and left channels (with an option for mixed or combined right and left channels) to represent the stereoscopic media. Secondly, it provides a means of displaying stereoscopic media inside a movable windowed area while eliminating pseudostereo conditions during movement. Thirdly, it provides automatic and manual optimization adjustments such as parallax shift adjustment, brightness control, color adjustment, and cross-talk reduction to the stereoscopic media based on viewing hardware, monitor size, and media content for optimal viewing quality. Fourthly, it provides seamless support for monoscopic (2D) viewing modes allowing delivery of said stereoscopic media in a normal 2D viewing mode." Column 6, lines 32 – 46, states, "This invention can have greater distribution and market penetration since it is not dependent upon a physical viewing device. This viewing system can be toggled to display monoscopic, as well as various stereoscopic modes (color anaglyph, gray anaglyph, line interleaved, page-flipping, cross-eye, parallel viewing, etc.). In monoscopic mode, the image appears in 2D like other 2D web based images which allows all web users to view the images in 2D even if they do not have a stereoscopic viewing device.

This is accomplished by showing either the left or right mono image. The user can select whether to view the left or right monoscopic view. Users without a physical stereo viewing device can see the media in monoscopic form by selecting to use either the right or left monoscopic views." Thus, Swift et al. discloses common data including data corresponding to several views, left and right image views, and displaying a monoscopic, two-dimensional image based on a selectively extracted view from one of the left and right views. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Isono et al. so that the common data includes image data corresponding to several views. One would have been motivated to make such a modification to the invention of Isono so that the common data already includes the left and right image view of the three-dimensional data and the circuit for converting digital image signals into a three-dimensional image signal as mentioned in Column 7, lines 46 – 52, may be omitted. It would have also been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention of Isono et al. to include generating the data for the display of a two-dimensional image based on one of the left or right stereoscopic images views for the two-dimensional display image. One would have been motivated to make such a modification to the invention of Isono so that memory and system resources may be saved in that a separate monoscopic, two-dimensional image is not required for either stereoscopic or monoscopic image viewing. Additionally, users who prefer the two-dimensional display rather than the three-dimensional display may be given the option of viewing three-dimensional images in a two-dimensional mode.

Isono et al. and Swift et al. as applied to claim 18 teach of the equipment of claim 19. Isono in view of Swift teaches of displaying a two-dimensional image based on common data. It is inherent in the invention of Isono that the display panel can only display up to a predetermined amount of data corresponding to its resolution. Additionally, as taught by Swift et al., the two-dimensional image to be displayed on the display panel is duplicated from one of the left or right image views read from the common data in memory.

Allowable Subject Matter

Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art taught of generating duplicate data by duplicating said first data on a predetermined basis, and generating said data for the display of said predetermined amount by combining said first data, said duplicate data, and said second data.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,025,895 to Yazaki et al.

U.S. Patent No. 6,046,849 to Moseley et al.

U.S. Patent No. 6,108,029 to Lo

U.S. Patent No. 6,483,559 to Hiraki et al.

U.S. Patent No. 6,816,207 to Jung

U.S. PG-PUB. No. 2002/0145682 to Kwon et al.

U.S. PG-PUB. No. 2003/0067563 to Tomono

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blake E. Betz whose telephone number is (703) 605-4584. The examiner can normally be reached on 7:30 - 4:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on (703) 305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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